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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/783,333	02/15/2001	Dong-seek Park	Q58598	3174

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EXAMINER
BRITT, CYNTHIA H

ART UNIT	PAPER NUMBER
2133	

DATE MAILED: 10/20/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

	Application No.	Applicant(s)
Office Action Summary	09/783,333	PARK ET AL.
	Examiner	Art Unit
	Cynthia Britt	2133

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE <u>3</u> MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.
- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
   Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on <u>07 September 2004</u>.

2a)☐ This action is **FINAL**.   2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) <u>1-10</u> is/are pending in the application.

    4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☒ Claim(s) <u>1,2,7,8 and 10</u> is/are allowed.

6)☒ Claim(s) <u>3,5 and 9</u> is/are rejected.

7)☒ Claim(s) <u>4 and 6</u> is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on <u>15 February 2001</u> is/are: a)☒ accepted or b)☐ objected to by the Examiner.

    Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

    Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

    a)☒ All   b)☐ Some * c)☐ None of:

      1.☒ Certified copies of the priority documents have been received.

      2.☐ Certified copies of the priority documents have been received in Application No. _____.

      3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

    * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)

2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)

3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.

4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.

5) ☐ Notice of Informal Patent Application (PTO-152)

6) ☐ Other: _____.

U.S. Patent and Trademark Office

PTOL-326 (Rev. 1-04)   Office Action Summary   Part of Paper No./Mail Date 20040929

DETAILED ACTION

Claims 1-10 are presented for examination.

Allowable Subject Matter

Claim 1, 2, 7, 8, and 10 are allowed.

Claims 4 and 6 are objected to as being dependent upon a rejected base claim,

but would be allowable if rewritten in independent form including all of the limitations of

the base claim and any intervening claims.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all

obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

The factual inquiries set forth in *Graham* v. *John Deere Co.*, 383 U.S. 1, 148

USPQ 459 (1966), that are applied for establishing a background for determining

obviousness under 35 U.S.C. 103(a) are summarized as follows:

1.   Determining the scope and contents of the prior art.
2.   Ascertaining the differences between the prior art and the claims at issue.
3.   Resolving the level of ordinary skill in the pertinent art.
4.   Considering objective evidence present in the application indicating obviousness or nonobviousness.

This application currently names joint inventors. In considering patentability of

the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of

the various claims was commonly owned at the time any inventions covered therein

were made absent any evidence to the contrary. Applicant is advised of the obligation

under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was

not commonly owned at the time a later invention was made in order for the examiner to

consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g)

prior art under 35 U.S.C. 103(a).

Claims 3 and 9 are rejected under 35 U.S.C. 103(a) as being unpatentable

over Strawczynski et al. U.S. Patent No. 6,628,641 in view of Ludwig et al. U.S.

Patent No. 6,697,352.

As per claims 3, and 9, Strawczynski et al. substantially teach the claimed

wireless packetization method and apparatus in which an improved transceiver

architecture and method for detecting errors in data cells transmitted by wireless

communication. It has been recognized that for a given code length there is a higher

probability of detecting an error using an error detection technique than there is for

determining that a detectable but non-correctable error pattern occurred using an FEC

technique. Furthermore, for some applications, as long as the header is correct, there

is utility in forwarding a cell with a corrupted payload. This architecture and method can

be used in both point-to-point and point-to-multipoint radio units. In either system, the

transmitter of a cell reconfigures the cell for transmission such that the receiving radio

unit can detect errors that occur in the header with greater accuracy than conventional

techniques. In particular, a reconfigured cell includes enhanced header error detection

coding by including an extended header error code (EHEC). The receiving unit

retrieves the reconfigured cell from the transmitted radio bit stream and detects header

errors using the enhanced header error detection coding. If the receiving unit detects no

header errors, various treatments can be applied. Typically, the enhanced header error

detection coding is replaced by a conventional header error coding check if no further

wireless transmission is required. The system can then simply forward such a cell,

relying on higher layer protocols to determine what treatment should be performed on

cells with corrupted payloads. Thus, there is provided a transceiver for receiving and

transmitting data cells over a wireless interface, having the following features; a block

processor having a transmit path for reconfiguring cells for transmission over the

wireless interface and for receiving transmitted signals and processing received

reconfigured cells; the block processor includes: a transmit header processor for

assembling a new header for a cell to be transmitted, including: means for extracting

HEC from said cell, and means for calculating and inserting an EHEC into the cell

header; a receive header processor, including: means for extracting EHEC from a

received cell, means for replacing the EHEC with an HEC, and means for detecting

errors in the received cell header; and means for discarding a received cell if an error in

the header is detected (column 1 line 53-column 3 line 15, Figure 4, column 4 lines 45-

54). Other aspects of Strawczynski et al. provide for enhanced treatments and optional

features. For example, additional Forward Error Correction or error detection coding

can be applied, either to cells or blocks of cells. FEC has the advantage of generally

improving the radio transmissions. Either way, this additional coding can help

determine the type of treatment to be applied. For example, if detectable but

uncorrectable errors are detected on a particular cell, but no error is detected in the

header, then the system can conclude that there is an error in the payload. This can

allow systems to select between various treatments, including: forwarding the cell,

forwarding the cell with a flag, discarding the cell, and producing an indication of the

error to a higher layer protocol. For groups of related cells for which the payload of

every cell is necessary, special treatments can be applied to conserve bandwidth by

discontinuing the forwarding and/or transmission of subsequent cells of a message

once a payload error has been detected in any cell of a message. (column 2 line 60

through column 3 line 15) Not explicitly disclosed is that the flag is indicative of

corruption in the data.

However, in an analogous art, Ludwig et al. teach that the commonly used data

exchange principle for networks is that of packet exchange. This means that the data to

be sent is broken down into units. Rules for sending and receiving such units, as well

as rules for the structure of the units themselves are determined by protocols. Protocols

are sets of rules that allow the communication between a sending end and a receiving

end, as the rules specify how and in what form data to be sent has to be prepared, such

that the receiving end may interpret the data and react in accordance to protocol

defined rules to which both partners in the communication adhere. An important concept

for allowing the exchange of data between different networks, and thereby between

numerous kinds of software and hardware, is that of protocol layering. This means that

a number of protocols are organized in a hierarchy of layers, where each layer has

specific functions and responsibilities. FIG. 5 illustrates the mechanism of passing data through the layers. The typical basic structure of a packet has two parts, namely a header and a payload part. The header contains information on the type of data contained in the payload part and communication control information for the respective layer. At the application layer, user data is processed by adding a header. The resulting data unit or packet is passed to the transport layer, where e.g. a TCP header is added. This TCP header contains information for the TCP peer on the receiving side. This process of embedding a packet of a higher layer in a larger packet of a lower layer is referred to as encapsulation. (column 1 line 24 through column 2 line 32, figures 3-5) Here, the examiner is trying to point out that if the TCP header of figure 5 had a header error in the initial layer, at the highest level, that TCP header error would be a data error. Therefore it would have been obvious to a person having ordinary skill in the art at the time this invention was made to use the system of Strawczynski et al. to send error flags indicating an error in the header – the header of one layer being the data of another layer as shown in Ludwig et al. This would have been obvious as suggested by Strawczynski et al. (column 2 line 60 through column 3 line 15) with the discussion of using error flags in messages sent.

As per claim 5, Strawczynski et al. teaches a method for treating errors by performing an additional operation which indicates whether there is an (uncorrectable) error in a cell as well as using, in this embodiment, the enhanced header error check on the header in order to determine whether there are errors in the header, and acting

accordingly. (see FIG. 6,) Either a forward error correction (FEC) or an additional error

detection step is performed on each cell. Note that this additional step can be

performed in a block, which includes a group of cells, although this adds complexity and

an increased probability of discarding a good cell, and is therefor, although possible, not

preferred. Each reconfigured cell is FEC encoded prior to transmission. During

reception, the receive block processor performs FEC decoding. During this step,

correctable errors are corrected. As part of the FEC decoding process, a determination

is made as to whether there were detectable but uncorrectable error patterns. If there

are no uncorrectable errors, the EHEC header error check step is performed, in order to

determine whether the EHEC shows a valid header was received. If a valid header was

received, then the cell is reconfigured back to conventional ATM format and forwarded,

otherwise it is discarded. If there is an indication that there was an uncorrectable error

in the cell, a determination is made as to whether there was a valid header received. If

there was an error in the header, the cell is discarded. Various treatments can be

applied depending on the nature of the payload. Treatments include forwarding the cell,

forwarding the cell with a flag, discarding the cell, or producing an indication to a higher

layer protocol of the error (Column 3 line 59 through column 4 line 19, column 6 line 24

through column 7 line 46, figure 1,figures 6a,b and figure 7).

Conclusion

The prior art made of record and not relied upon is considered pertinent to

applicant's disclosure.

U.S. Patent No. 6,519,223   Wager et al.

This patent teaches a telecommunications system and method is disclosed for implementing a semi-reliable retransmission protocol that utilizes both selective repeat Automatic Repeat Request (ARQ) and segmentation and assembly of data packets. The new semi-reliable retransmission protocol includes a timer based triggering of a retransmission timeout for retransmission protocols, which allows the retransmission timeout to become insensitive to variations in the channel rate. In addition, the retransmission timeout can be defined based upon the maximum delay allowable for the retransmission of corrupted data packets over the air interface. For every data packet received a timer monitoring the transmission time of the data packet is initialized. If the timer elapses for the data packet this data packet is marked as discarded in the transmitter, and a request is sent to the receiver to ensure that transmissions carrying that data packet are discarded in the receiver.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Cynthia Britt whose telephone number is 703-308-2391. The examiner can normally be reached on Monday - Thursday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Albert Decady can be reached on 703-305-9595. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the

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Business Center (EBC) at 866-217-9197 (toll-free).

cb
Cynthia Britt
Examiner
Art Unit 2133

GUY J. LAMARRE
PRIMARY EXAMINER